

Bisc 102 Section 8
INQUIRY INTO LIFE: HUMAN BIOLOGY
Spring 2015, 3 credits

Meeting time and Place: T-Th, 1:00 – 2:15 pm, Lamar Hall 129

Instructor: Dr. Tiffany Bensen / Shoemaker Hall 320
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Office hours: Tuesday, 2:30 to 3:30 pm
Wednesday, 10 to 10:50 am
Friday, 11 to 11:50 am
or by appointment (set up by email)

About Bisc 102

Designed for non-biology majors, Bisc 102 introduces students to the basic principles of the science of life by focusing on the human body. The associated laboratory is Bisc 103 (a separate course, coordinated by Dr. Denis Goulet, which may or may not be taken at the same time as Bisc 102).

Bisc 102 and 103 apply to the University of Mississippi's science requirement of the core curricula but will not count if Bisc 160 and 161 are counted.

Course Learning Objectives

In this course, you will learn about the science of life with an emphasis on the human body. After a semester of lecture and out-of-class work, each student should be able to:

- comprehend the role of chemicals in the body and how they interact to make up life;
- describe the function of the four classes of biological molecules that make up the human body;
- explain cellular processes common and unique to different kinds of eukaryotic cells: energy production, reproduction, and communication;
- describe how cells, tissues, and organs relate to each other;
- explain the function of a variety of organ systems in sustaining the human body;
- convey the role of oxygen in the human body and understand the importance of good cardiovascular and respiratory health;
- know how humans reproduce and maintain good reproductive health;
- predict the inheritance of traits from one generation to the next; and
- explain how science proceeds and how scientific knowledge accumulates and leads to scientific theories.

Ideally, this knowledge collectively will lead to a greater appreciation of the human body and the ability to maintain good health and to actively participate in medical care when needed.

Required Materials

1. Hoefnagels, M. *Biology: The Essentials*. First Edition. New York: McGraw-Hill, 2013.
(**Textbook, either in paper or electronic format**)
2. "Connect" access with LearnSmart. Comes with a new book, or you may buy online.
(**For homework and as a study tool.**)
3. Response Card NXT by Turning Technologies (TT). (aka "**clicker**")

How to Do Well in BISC 102

Attendance: Arrive on time to attend all lectures and be an active participant in class. Out of courtesy to your instructor and fellow students, please arrive on time, and if late, be quick and discreet in taking your seat out of respect for those of us already in class. Lecture material will not be available any other way than from lecture, so if you must miss a given lecture, arrange to get notes from a classmate.

In-Class:

1. **Stay attentive.** Your time in the classroom should not be wasted. Instead, do what you need to do to focus on lecture and learn while you are in class.
2. **Practice good note-taking habits.** Note-taking is a skill that takes practice to perfect. Work to identify and jot down important concepts and supporting key words; strive to be brief! It is inefficient and unnecessary to record every word from lecture.
3. **Actively think and ask questions.** If you don't understand a concept or if it is unclear to you what you should be learning from a particular lecture or how concepts fit together, then the best time to resolve your confusion is in class.
4. **Participate.** Answer questions with your TT Response Card (no answers received, no participation credit – see grading details).
5. **Respect the learning environment.** Do not behave in a way that is disruptive to your classmates or to Dr. Bensen (such as by talking, visibly sleeping, or violating the electronics policy as detailed below). Such behavior is subject to a participation point penalty.

Of special note: University policy provides for reasonable accommodations to be made for students with verified disabilities on an individualized and flexible basis as specified under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 (ADA). If you have paperwork from Student Disability Services (915-7218) giving recommended accommodations, **make an appointment to meet with Dr. Bensen right away to meet and discuss your particular circumstances.

Out-of-Class: Study. Plan to devote multiple hours per week to studying biology outside of class. There are many ways to learn but the goal is to understand the main concepts and support them with facts. Some guidance to help you achieve this goal:

- **Be prepared for lecture.** Read the relevant sections from your textbook *before* coming to lecture. After reading a section, stop to answer the “Mastering Concepts” questions. After lecture, go back and read parts of the chapter that are relevant to lecture and work to synthesize material presented in lecture. You will likely have to re-read sections to develop a working knowledge of the concepts.
- **Review, rewrite, and refine your notes.** After class, revisit your notes to fill in gaps and to synthesize facts and concepts before moving on to new material. Having a grasp of material from previous lectures will make easier work of learning the new material and save you from cramming before exams (which is proven to be an ineffective way to learn).
- **Use Dr. Bensen’s study questions.** For each book chapter covered in class, Dr. Bensen will write a set of study questions and post them to Blackboard. These questions will help identify important facts and concepts and prompt you to actively engage with the material. Using your notes and your book, strive to answer these questions completely and correctly. If you can answer all of the study questions without the crutch of your notes or your book, you will do well on the tests.
- **Make use of the publisher’s online learning resources.** From within Blackboard, you can access McGraw-Hill’s “LearnSmart,” which has a variety of interactive tools to facilitate your learning. At the beginning of the semester, you will create an account at this site and register using the access code from your new textbook or purchased separately, online.

- **Take advantage of Supplemental Instruction.** This section of BISC 102 is a designated Supplemental Instruction (SI) course. What is SI? SI is an optional set of weekly peer-assisted review sessions open and FREE to all students enrolled in this course. SI is a chance to get together with your classmates and work together to organize and compare notes, discuss important concepts, develop study-strategies, and predict exam topics. Regular attendance of SI will help you to improve your understanding of the course material, and thus improve your grades. SI sessions are organized by a trained “SI leader,” a student who has taken Bisc 102 previously and done well. National statistics on the effectiveness of SI sessions at our university and at others clearly show that students who participate regularly in SI sessions earn better test scores than those who do not.

The **SI leader for our course is Sara Williston (sewillis@go.olemiss.edu)**, who will lead three sessions per week with extra review sessions to be held before exams. The semester SI session schedule will be finalized the first week of class and then announced in class and posted on Blackboard, and sessions will begin the second week of class. The day and time for exam review sessions will be announced the week before each exam.

- **Get help when you need it.** Seek answers immediately to questions that you think of during lecture or while reading and organizing your notes. I am happy to meet with you during office hours or by scheduled appointment to discuss questions about the material.

Course Policies

Electronic devices: Except for TT Response Cards, **use of electronic devices is not allowed in the classroom.** This policy applies to cell phones, ear buds, headphones, laptops, and electronic tablets, all of which must be put away during class. If you would like to use a laptop or an electronic tablet for note taking, you must see Dr. Bensen to discuss the possibility before bringing it to class. If you violate this policy, you can expect to be called out in class and penalized the day’s participation points.

TT Response Cards: You are responsible for 1) registering your Response Card on Blackboard before using it in class; 2) bringing your Response Card to class every day, fully functional and with enough battery power for the entire class – if you are not able to participate with your TT Response Card, you will not receive participation points for that day; and 3) using only your own registered TT Response Card in class. **Do not use any other response card other than your own! Asking or allowing another student to send answers for you (whether you are in class or not) absolutely is cheating. Doing so is a very serious form of academic misconduct: for all students involved, the misconduct will be formally reported to the University Academic Discipline Committee and all students involved will lose all participation points for the semester. Expulsion from the course is also possible.** It is your responsibility to ensure that your card is used only by yourself. The blame and the consequence of someone else using your card (regardless of the reason) will fall to you and only you. **You must have your response card for use in class on Tuesday, January 27, and it must be registered on Blackboard before you use it in class** (see Blackboard for instructions).

Academic Misconduct: Academic dishonesty or misconduct of any kind is unacceptable and will not be tolerated. Academic misconduct and the procedure for handling misconduct are described in the University of Mississippi Policy Code ACA.AR.600.001 (reproduced as Section II of the M-Book).

Attendance: You are expected to attend all classes because it is to your benefit to hear lecture first-hand, and you must be in class to earn participation points, which make up a substantial part of your grade. There may be an occasion, however, when you are not able to make it to lecture. For example, you miss class because you are bedridden with illness, you have a family emergency, or you are involved in a University-sanctioned event. Alternatively, you may be in class but without your functioning response card. Whatever the circumstances, note that **there are no excused absences in this class**; instead, absences will be marked as non-penalized (NP), **a maximum of 2** times, and any absence beyond 2 will be penalized the participation points for the class missed with a mark of zero for the day. NP absences will be accounted for at the end of the semester by reducing your total points possible for participation. If you have a medical or family crisis, or are involved in University-sanctioned activities that will push you beyond 2 absences, meet with Dr. Bensen to discuss your circumstances. Any University-sanctioned absences must be verified with documentation from the University.

Also, as part of the University's Freshman Attendance-Based Initiative, you are required to scan your University ID card each day when arriving for lecture in Lamar 129. Be sure to have your card and scan it when you arrive to class. If you do not have your card to scan on any given day, the University record will show you as absent from class, even if you were in class. Scanning your ID is separate from Dr. Bensen's record (which is based strictly on active engagement in class using your response card) and is kept between you, your academic advisor, and the University.

Blackboard: You have been assigned a Web ID and an associated password for access to online resources, including the University of Mississippi's course management system known as Blackboard (<https://blackboard.olemiss.edu/>). Enrollment in this class provides you with access to course information posted on Blackboard. I post class announcements, grades, study questions, and other important information on Blackboard regularly each week throughout the term, so check Blackboard daily for this important information. If you have trouble with Blackboard, please email or see Dr. Bensen immediately.

Contacting Dr. Bensen: You are welcome to talk with me briefly as needed before or after class, but it is best to see me during office hours (see page 1) to discuss issues or the material at length. If you cannot come during office hours, send an email to make an appointment. When sending an email, please be courteous and professional by 1) identifying yourself and the section in which you are enrolled in your note or the subject line (not doing so means I will not respond to your note), 2) using proper English and complete sentences (no texting shorthand please), and 3) NOT opening your note with "Hey."

Email: I routinely communicate with the class by email. Sometimes I will need to get a hold of YOU specifically, and if so, I will use email, and it will be important that you get the note. I will use the email address that the University provides to me, and then it will be your responsibility to get my note, so you should regularly check your email.

Grading

Source	Point Value
Syllabus Quiz	30
Lecture participation*	161
Online assignments	100
Exam 1	100
Exam 2	100
Exam 3	100
Final (Comprehensive)	100
MAXIMUM POINTS POSSIBLE**	691

% of Possible Points:

>90% = A

80-89% = B

70-79% = C

60-69% = D

<59% = F

(no +/- in this course)

* based strictly on receiving answers from your response card to the questions asked during lecture (answers will not be accepted any other way)

**assuming no penalized absences; to be adjusted for NP absences at the end of the semester

Description of Assessment:

Note: with the exception of online assignments, all forms of assessment depend on your response card. To be eligible for full credit, you will need your functioning response card.

Syllabus Quiz: on the second day of class (January 27), you will take an in-class quiz using your response card with 15 questions about the syllabus.

Lecture Participation: Participation points are earned from TT Response Card answers received to questions asked during lecture. Typically, 4-5 questions will be asked per lecture, and to earn full participation credit, your valid answers to all (or all but one) must be received by the software. Any problem with your TT Response Card that keeps you from participating means you are ineligible for participation points that day and can take an absence or zero points for the day. Starting with the third day of class, 7 points are possible for each of 23 lectures.

Online Assignments: For all chapters, Dr. Bensen will assign an online exercise (sometimes two) from the publisher's website (called "Connect," which is accessed through Blackboard). Each assignment will be worth up to 10 points, although a maximum of 100 points will count toward your grade for the semester. You will be notified of the availability of an assignment and its due date in class and on Blackboard.

Exams: Exams are based on lecture material (which is derived from the textbook) and will consist of multiple-choice, short-answer, and true/false questions, each usually worth 2 points for a total of 100 points. The *comprehensive* final exam will take the same form as regular term exams, but will cover all topics from the semester. For each exam, you will submit answers using your TT Response Card as well as submit them on paper, but without a TT Response Card, you will take a zero for the exam.

Exam Policy

Three regular term exams are scheduled for this semester; all students are expected to be in class on these dates with a fully functioning TT Response Card to take the exam. Also, you will be required to show your student ID on exam days in order to turn in your exam. If you do not have your identification, you will be penalized 50% of your exam score. Per University policy, all students are required to take the final exam and to take it on the day and time scheduled for the class as set by the University; double check our final exam day and time on line: <http://registrar.olemiss.edu/2014/10/14/final-exam-schedule-spring-2015/>

Please be aware that **there are very few valid reasons for missing an exam**. Feeling “under the weather,” “not your best,” “not sufficiently prepared,” or “having to get to the airport to catch a flight” are NOT valid reasons. Valid reasons for not being present for an exam are narrowly defined as either a medical or family **emergency** or a University-sanctioned event. With formal documentation of the reason for missing the exam, a student *may* be allowed to make up a regular-term exam, and if so, only *one* make-up during the semester will be allowed.

To be eligible to make up a regular-term exam:

- 1) you must notify Dr. Bensen immediately, ideally before the exam, but at most, within 24 hours after the exam. Notification by email is the most reliable form of contact (see the top of the syllabus for contact information; this information is also on Blackboard); and
- 2) Dr. Bensen will respond to your contact and perhaps require further action on your part, so watch for her response;
- 3) when you return to campus or class, you must again contact Dr. Bensen immediately to discuss the make-up exam. If you are in class after missing an exam, but fail to contact Dr. Bensen as described here, you forfeit any opportunity to make up the exam.

Making-up a missed exam is not guaranteed; you must have a legitimate reason (see above) and must follow the steps detailed above in order to make up an exam. All make-up exams must be taken within, at most, one week of returning to class. A make-up exam may take the form of multiple choice, short-answer, or essay questions, and may be written or oral, at Dr. Bensen’s choosing.

Proposed Lecture Schedule (subject to change with 24-hour notice)

Week	Date	Day	Chapter and Topic
1	January 22	Th	Syllabus / Blackboard / Online Resources
2	27	T	Response Card Tutorial / Syllabus Quiz
	29	Th	<u>Unit 1: Science, Chemistry, and Cells</u> Ch 1, Scientific Study of Life -what is life? how is it organized? -what is science? how does scientific knowledge advance?
3	February 3	T	Ch 2, The Chemistry of Life
	5	Th	-what is life made of and how is it held together? -how is water life-sustaining? -what are the organic molecules that make up life?
4	10	T	Ch 3, Cells -what kinds of things do cells do? -what parts make up the cell? what do they do?
	12	Th	Ch 4, The Energy of Life -what kind of energy fuels the cell?
5	17	T	-which kind of chemical facilitates reactions? -does membrane transport always use energy?
	19	Th	Ch 6, How Cells Release Energy -how does the cell convert energy into a form it can use? -how does this process depend on oxygen?
6	24	T	EXAM #1 (Chs 1, 2, 3, 4, 6)
	26	Th	<u>Unit 2: Cell Reproduction, Genetics, and Inheritance</u> Ch 7, DNA Structure and Function
7	March 3	T	-how are DNA and RNA alike and different? -how does DNA lead to proteins? -are viruses living organisms?
	5	Th	Chs 8&9, DNA Replication and Cell Division - how do new cells arise?
8	10,12	T-Th	No Classes: SPRING BREAK
9	17	T	Chs 8&9, DNA Replication and Cell Division (Continued) - what is cancer and how does it relate to cell division? - how are genetically unique cells made for sexual reproduction?
	19	Th	Ch 10, Patterns of Inheritance -what are the basic laws of inheritance?

Week	Date	Day	Topic
10	24	T	Ch 10, Patterns of Inheritance (Continued) -how are traits passed from one generation to the next? -how can we predict traits in offspring between two parents?
	26	Th	<u>Unit 3: Animal Physiology</u> Ch 23, Animal Tissues and Organ Systems -how are bodies organized? -how do the body's organ systems work together?
11	31	T	EXAM #2 (Chs 7, 8, 9, 10, 23)
12	April 2 7	Th T	Ch 24, The Nervous System and the Senses - how does the nervous system convey electrical signals? - how is the nervous system organized? - how do we connect with and react to the outside world?
	9	Th	Ch 25, The Endocrine System - what organs make up this system? - what functions do these various organs serve? - what happens when cells of these organs fail?
13	14 16	T Th	Ch 27, The Circulatory and Respiratory Systems - what is the function of the circulatory system? how is it structured? -how is the respiratory system structured to deliver oxygen to the body?
14	21	T	Ch 28, Regulating Temperature, Nutrients, and Body Fluids - how do we break down food in our bodies? - how is stability of the body's conditions maintained? - how is our digestive system organized? - how does the body get rid of cellular waste?
	23	Th	EXAM #3 (Chs 24, 25, 27, 28)
15	28 30	T Th	Ch 30, Animal Reproduction and Development - how does human anatomy function for sexual reproduction? - how do an egg and a sperm meet for the purpose of fertilization? - how do you maintain your reproductive health?
16	May 7	Th	FINAL EXAM (Ch 30 + All Chapters) Noon to 3 pm

